

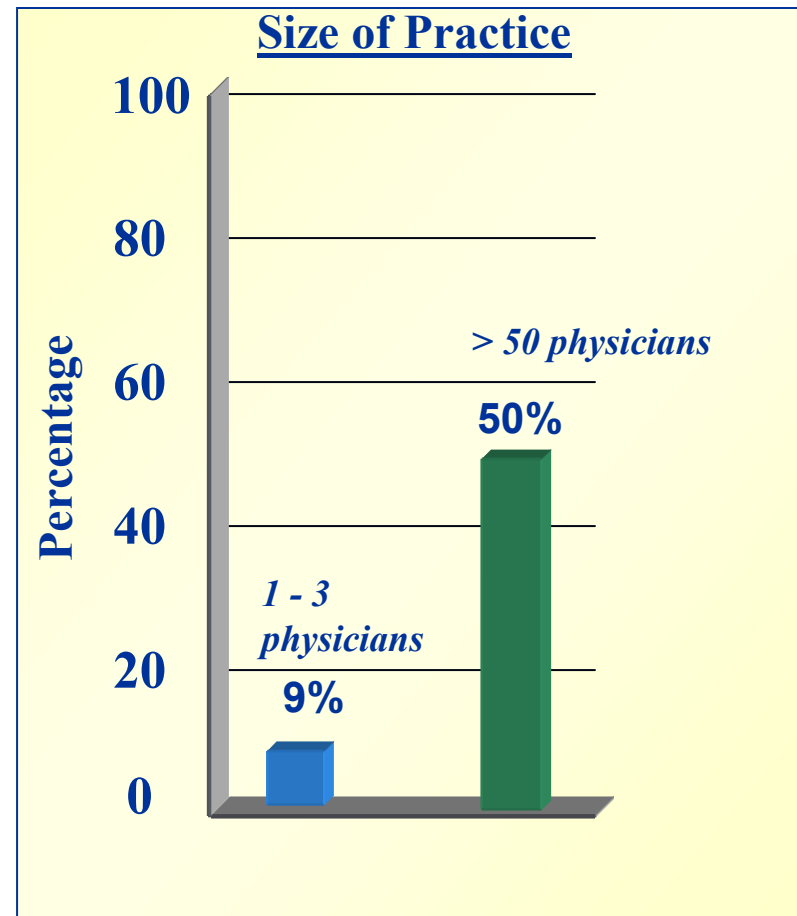
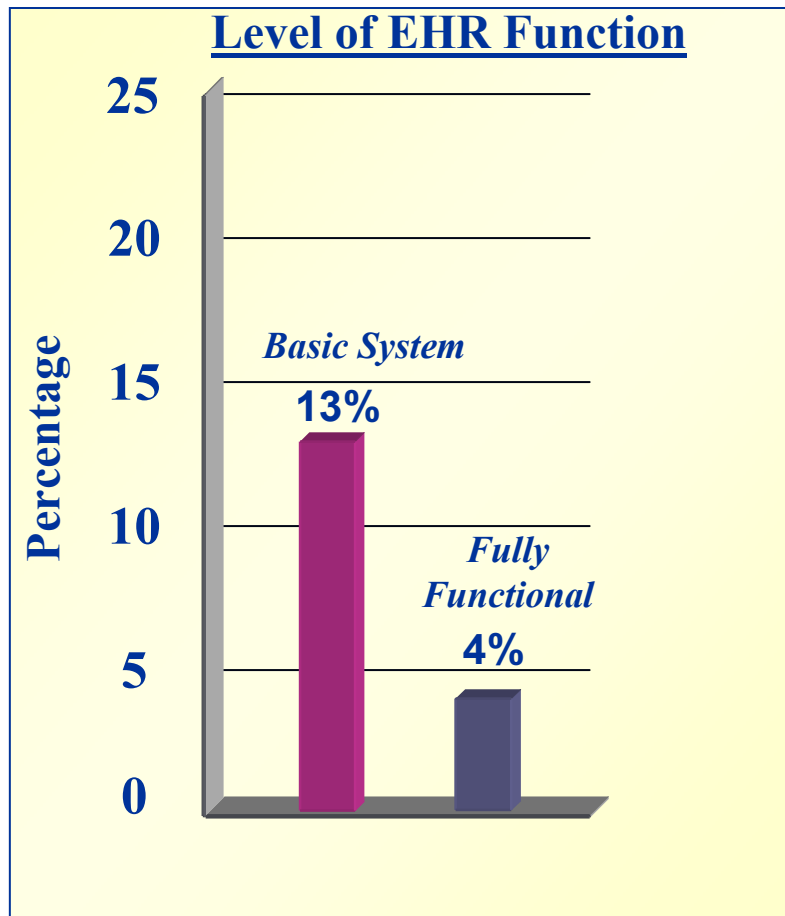
# Health IT and Personalized Medicine Policy Implications

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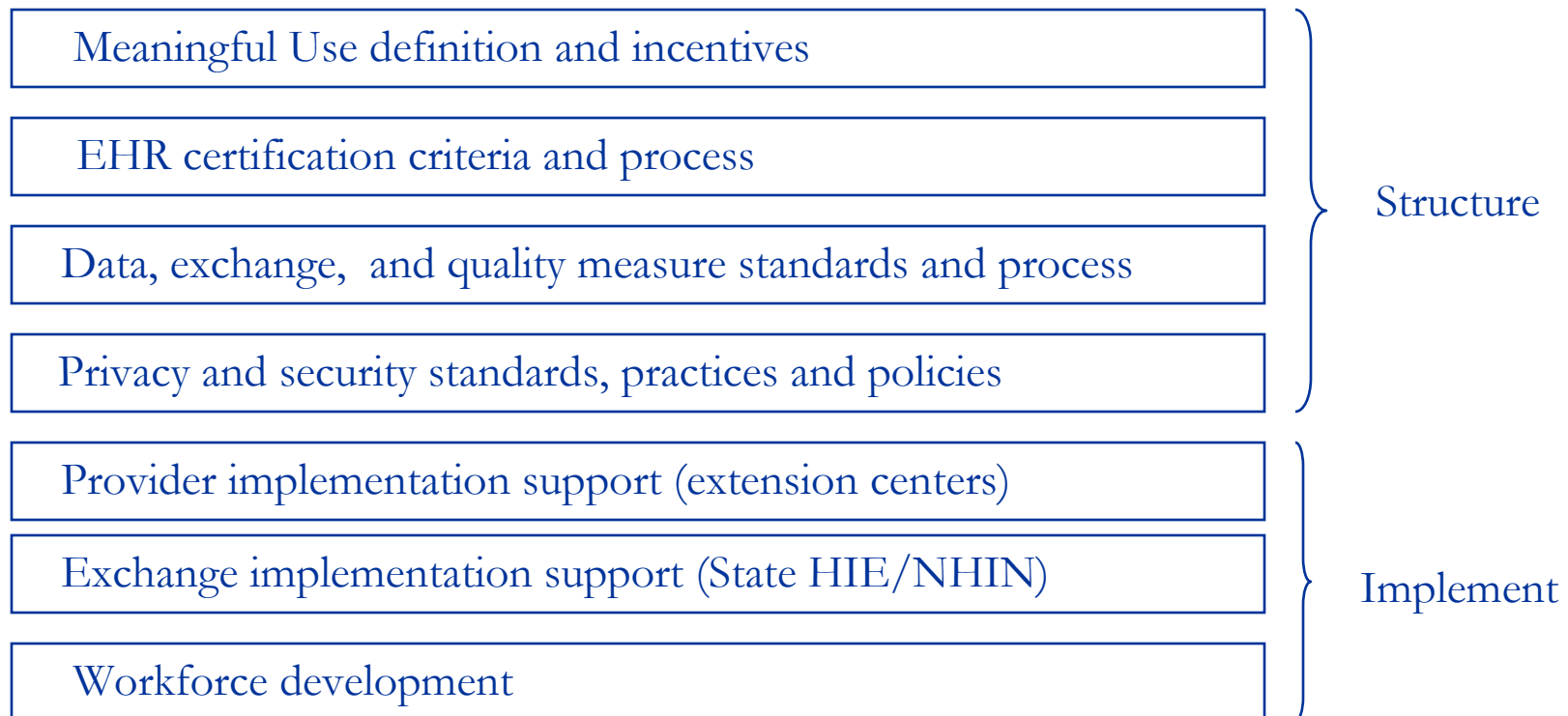
# EHR Adoption: Where are we now in Office Practices?



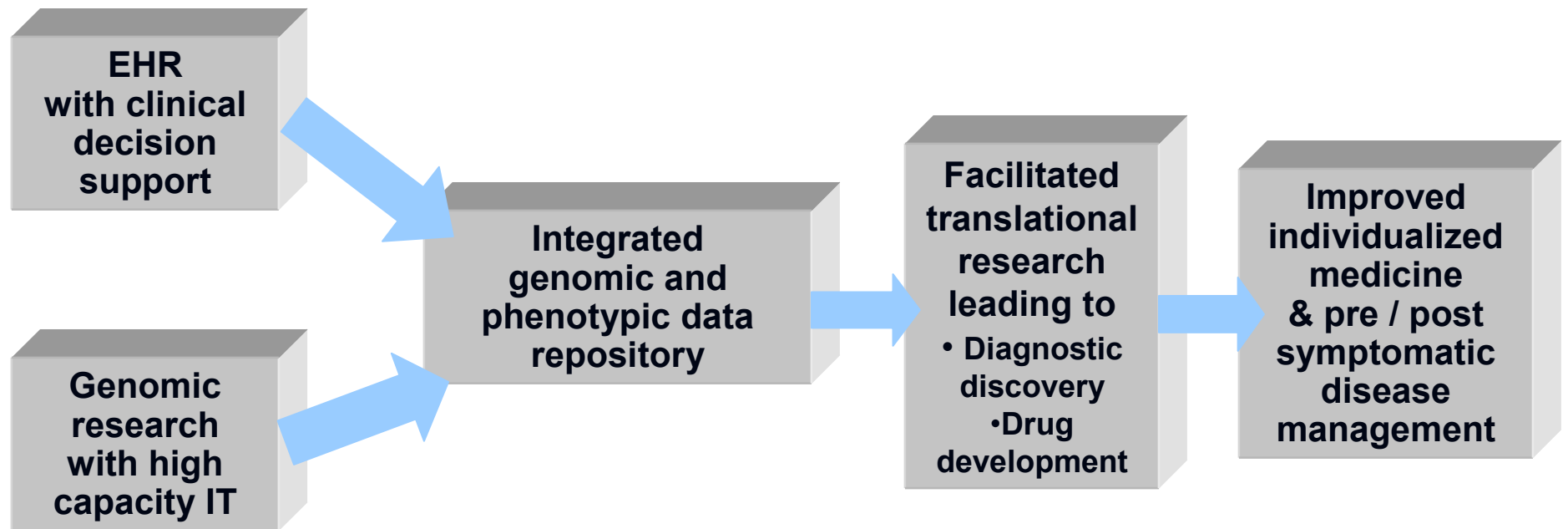
DesRoches CM et al., N Engl J Med 2008;359:50-60.

# An Overview of the National Interoperable EHR Strategy

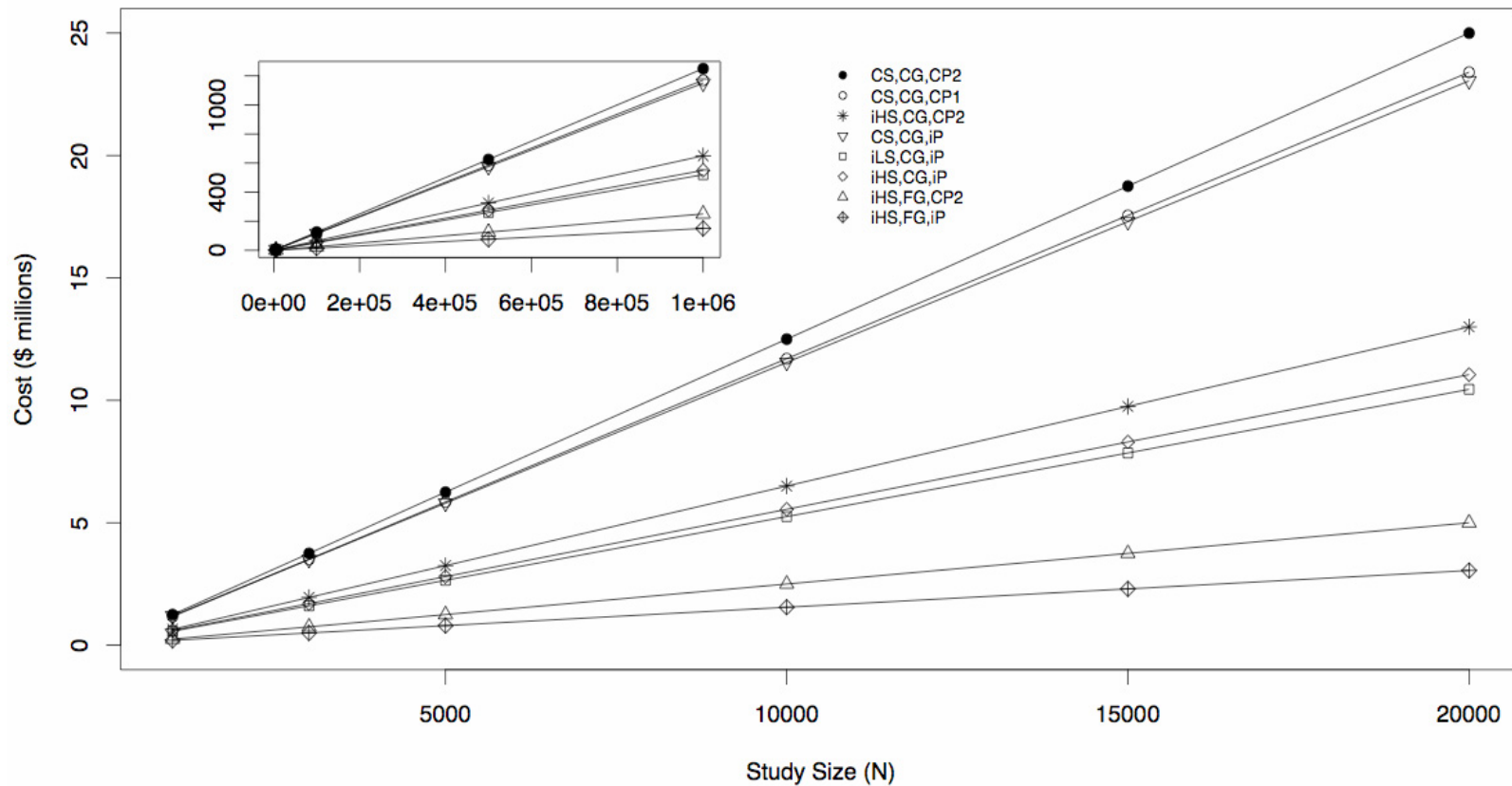
**Adoption** → **Meaningful Use** → **Outcomes**



# The Partners Vision for Personalized Medicine

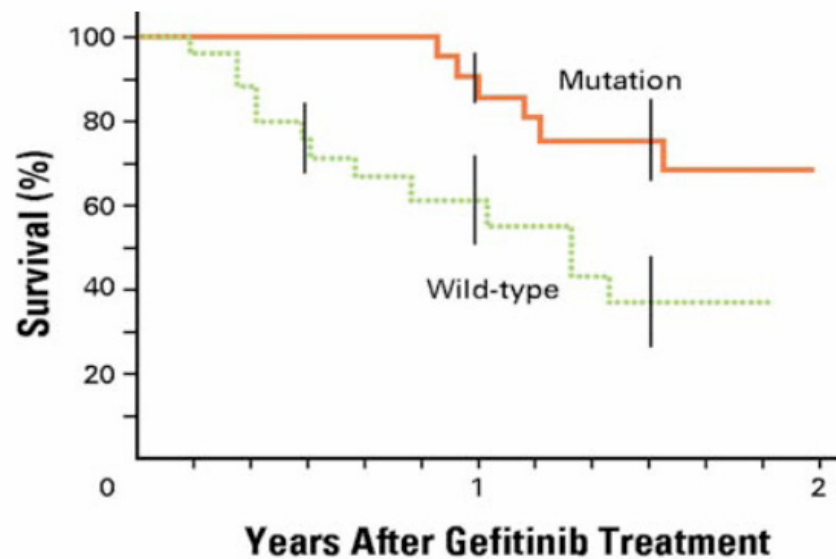


# Costs of “High Throughput” Clinical Research



# Survival in Patients with HER1/EGFR Mutations

## Survival in Patients with HER1/EGFR Mutations



No. of patients at risk				
Mutation	33	28	19	12
Wild-type	26	18	10	6

# Viewing Genetic Test Results

LMR: Patient Genome Explorer - DEV [Help](#) | [Feedback](#) | Babb, Larry | [Sign Out](#)

Test View | Variant View | My Orders

Claus, Santa 1001 (MGH-MRN) 12/31/1852 (<age>) <gender>

Show Germline  Show Somatic  Show Prenatal

Accession	Test Date	Status	Alerts <sup>1</sup>	Contact	Test	Disease/Drug Assessed	Test Category	Indication	Primary Specimen	Genomic Source
PM-50-G8040	To Be Implemented	FINAL 01/06/2009	+	LMM	<a href="#">lmMYH7-km_L</a> MYH7 3169G>A (G1057S) Presumed Pathogenic	Arrhythmic Right Ventricular Dysplasia <b>Hypertrophic Cardiomyopathy</b>	Disease (Diagnostic/Presymptomatic)	Family History Family history of DCM, Limb Girdle Muscular Dystrophy, and sudden death	To Be Implemented	Germline
PM-50-D9000	To Be Implemented	FINAL 01/06/2009	!!!	LMM	<a href="#">lmHCM-pnE_L</a> , <a href="#">lmSegConfirm_L</a> MYBPC3 208G>T (E70X) Pathogenic <b>MYBPC3 208G&gt;T (E70X) Pathogenic has been reclassified as 'Presumed Pathogenic' as of '01/08/09'. The attached report may be out of date.</b> LAMP2 680_701del (S227del) Presumed Pathogenic	Hypertrophic Cardiomyopathy	Disease (Diagnostic/Presymptomatic)	Cardiovascular heart attack	To Be Implemented	Germline

# Genetics Clinical Decision Support

Select	Desktop	Pt Chart: Medications	Oncology	Custom	Reports	Admin	Sign	Results	?	Resc
<b>Warning</b>										
You are ordering: TARCEVA (ERLOTINIB)										
<b>Drug - Genetic Intervention</b>										
Alert Message					Keep New Order - select reason(s)					
TARCEVA (ERLOTINIB) is contraindicated in patients with a somatic EGFR mutation known to be associated with resistance to Tyrosine Kinase Inhibitors for treatment of non-small cell lung cancer.  Most recent = Resistant 12/21/2006  See Report in Genetics Summary under Results					<b>Reasons for override:</b> <input type="checkbox"/> Patient has pancreatic cancer <input type="checkbox"/> No reasonable alternatives <input type="checkbox"/> Other <input type="text"/>					
Continue New Order			Cancel			Back To Lookup				

# Broad Policy Implications

- Encourage the use of integrated phenotype (EHR-based) and genotype data to further clinical research and surveillance
- Encourage the incorporation of genetic data, genetic-based clinical decision support and family history into EHRs

# Policy Implications

- Develop an understanding of the “analytical boundaries” of using EHR data as the source of phenotype in association studies
- Devise methods (heuristics, algorithms, data standards) to improve the yield of EHR data
- Explore models of multi-site analyses of federated data
- Further the development of standards for genetics-oriented data capture and exchange

# Policy Implications

- Develop strategies to address genetics-based clinical decision support algorithms and results reporting
- Define approaches for delivering curated genetic test results, their meanings and decision support logic
- Examine role of family history data
- Develop strategies for providing patients with information about their genetic data and associated health risks
- Further methods to protect privacy of patient data